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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,597	09/09/2003	Arnold P. Kehrli	05770-189001 / AMSC-633	1923

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EXAMINER	
PARRIES, DRU M	
ART UNIT	PAPER NUMBER
2836	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/658,597	KEHRLI, ARNOLD P.	
	Examiner	Art Unit	
	Dru M. Parries	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11 and 13-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11 and 13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 21, 2006 have been fully considered but they are not persuasive. Regarding the added limitation, Morita teaches his power flow controller selectively regulating the magnitude or direction of power flowing through the second transmission line. As stated by the Applicant (at the bottom of page 5), Morita *selects* when to regulate the magnitude/direction of power by changing the current (when certain conditions are detected).

In response to applicant's argument that there is no suggestion to combine the references (Sinha with Morita and Hingorani, in claim 10), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would know that adding a power flow controller to a power transmission line would allow for more control of the power on that line and therefore would eliminate problems involving delivering too much or too little power. Also, the Examiner would like to point out that Hingorani's power flow controller "selectively" controls power through the line (Col. 2, lines 51-55).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410) and Morita (6,344,956). Sinha teaches first and second transmission lines in parallel, and the second line including a superconductor ([0134]; Fig. 29). It is also inherent that the second impedance characteristic is less than the first, based on the superconductor (also see [0144]). He also teaches the superconductor being a cold-dielectric high temperature superconductor (Fig. 5). He also teaches a refrigeration system for cooling the high temperature superconductor ([0137]). Sinha fails to teach the use of a power flow controller, which is a reactor. Morita teaches a power flow controller, which selectively controls the magnitude of the power flowing through a superconductor, where the controller could be a reactor (Col. 1, lines 35-43; Col. 8, lines 30-36). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a reactor onto the superconductor transmission line of Sinha's invention to regulate the power flow through the line and also reacts quickly to short-circuit accidents.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410) and Morita (6,344,956) as applied to claims 1 and 3 above, and further in view of Talisa et al. (5,878,334). Sinha teaches a superconductor being an oxide (Abstract), but fails to specify exactly what type of oxide superconductor. Talisa teaches the use of a high temperature superconductor made of Tl-Ba-Ca-Cu-O. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Talisa's superconductor in Sinha's

invention since it is known in the art and the exact type of superconductor that Sinha describes isn't explicitly known.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410) and Morita (6,344,956) as applied to claim 1 above, and further in view of Shimomura et al. (JP 11122793A). Sinha and Morita teach a multi-line power transmission system. Neither reference explicitly teaches what the first transmission line is made of. Shimomura teaches a power transmission line which is a cross-linked polyethylene power transmission line (USE). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this transmission line into Sinha's invention since it is known in the art as a working power transmission line that carries high voltages and Sinha doesn't teach a specific type in his invention.

6. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410) and Morita (6,344,956) as applied to claim 1 above, and further in view of Hingorani (5,420,495). Sinha and Morita teach a multi-line power transmission system. Neither reference explicitly teaches a bi-directional power flow controller which is also a phase angle regulator. Hingorani teaches a bi-directional power flow controller which also regulates the phase angle (Col. 2, lines 45-47, 58-60). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this controller into Sinha's invention so that the operator can have more control over the flow of power in the system.

7. Claims 10, 11, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410), Morita (6,344,956) and Hingorani (5,420,495). Sinha teaches first and second transmission lines in parallel, and the second line including a superconductor

([0134]; Fig. 29). It is also inherent that the second impedance characteristic is less than the first, based on the superconductor (also see [0144]).. He also teaches the superconductor being a cold-dielectric high temperature superconductor (Fig. 5). He also teaches a refrigeration system for cooling the high temperature superconductor to keep it in a specified operating range ([0137]). Sinha fails to teach determining and regulating the level and amount of power flow through the second transmission line. Morita teaches a current limiting element (power flow controller) coupled to a superconductor, which selectively regulates the power flowing through the superconductor (Col. 1, lines 39-47; Col. 8, lines 30-36). Hingorani teaches a bi-directional power flow controller which determines and regulates the power flowing in the transmission line (Col. 2, lines 45-47, 51-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Hingorani's power flow controller on the superconducting line of Sinha's invention so that the operator can have more control over the flow of power in the system.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (2003/0183410), Morita (6,344,956) and Hingorani (5,420,495) as applied to claim 10 above, and further in view of Shimomura et al. (JP 11122793A). Sinha, Morita, and Hingorani teach a multi-line power transmission system. Neither reference explicitly teaches what the first transmission line is made of. Shimomura teaches a power transmission line which is a cross-linked polyethylene power transmission line (USE). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this transmission line into Sinha's invention since it is known in the art as a working power transmission line that carries high voltages and Sinha doesn't teach a specific type in his invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on Monday -Thursday from 9:00am to 6:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

1-8-2007

CHAU N. NGUYEN
PRIMARY EXAMINER